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Why Go Bigger When You Can Go Smaller?

By Jason Gago

Going smaller can enable you to "Go Big" with respect to video walls. So now you can avoid the days of trying to rig a massive 103" or 110" display to the underside of a questionable elevator and wondering if you are going to be an OSHA statistic.

DVLED Benefits
The benefits of today's Direct View LED (DVLED) are plentiful and include ease of shipment and smaller, lighter individual boxes, so less physical stress on the installer, to name a few. Additionally, the equipment can fit onto wooden pallets, making shipment and mobility much more manageable. In addition, they can be very bright and captivating while competing well against ambient light.

Cameras for AV: The Office Side of Meeting Equity

By Ben Dandola-Grubb

Regarding cameras for the brick-and-mortar office, what do you need and how do you figure it out? Let's start with your goal before discussing the best solutions.

Communication is much more than verbal. Facial expressions and body language can speak louder than words. When a camera is zoomed in on someone, you can better see their facial expressions, like having them in the room with you. The traditional video conference room had a single camera at the front and meeting participants were each small on the remote participants' screen. That absolutely isn't good enough today.

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A dynamic meeting requires participation from everyone on the call. Therefore, we should each have a great experience with equal opportunities for participation. Hence the term Meeting Equity. The cost of a well-placed and well-planned LED wall often returns value in terms of content viewing, critical thinking and decision making, end-user engagement, and WOW factor. Your DVLED canvas can be a dull 16:9 aspect ratio or atypical and quirky, like 60:5 for a lobby or information ticker. The possibilities for diversity with DVLED are endless. You can occupy an entire wall in a room or a small segment.

But First, Things You Need to Know Before You Buy
Okay, here are things to consider; start with step one. Where do you want to place the DVLED? A boardroom wall for critical thinking? Will it sit in the lobby and display content to engage employees? Will it be outside a retail giant notifying potential shoppers of spectacular deals while driving 10 miles above the posted speed limit? All these locations will require us to answer two key variables—size and pixel pitch (size of the actual pixel). The image must be big enough to capture attention, and the pixels must be small enough so the viewer can't see the individual pixels. If we know the size and pixel pitch, the wall can start to take shape.

The point is that Direct View LED walls are purpose-built to fit your needs from smaller, more common components repeated over and over and over. So if you need a 90-inch display or a 50-foot wall, you can repeatedly use the same pixel cabinet and the electronics to support it. You are stitching together smaller displays to form a more seamless, prominent display. The limit is now your canvas and your budget rather than the dimensions of the stairwell or elevator that has stopped so many from achieving what they have wanted.

The next question we need to answer is regarding the content. What is going to feed this display? Will it be a Windows machine displaying Excel spreadsheets or some digital signage wrapping a lobby or building's exterior? These questions will help answer the crucial question, what do you want to see? Viewing an Excel spreadsheet is straightforward compared to digital signage wrapped around a lobby wall. In addition, Excel may only require a single computer with a single video output. On the flip side, a signage solution may require a dedicated power-hungry machine with multiple video outputs synchronized to help make the video appear seamless and smooth.

Wait, There are a Few More Things to Consider
We need to answer other criteria, like how bright it needs to be, color reproduction, and so on, but those requirements tend to be secondary in nature, yet still important. For example, you may need a super bright wall if it is located in an area with lots of direct natural light. You may require super accurate color reproduction if you are working for an advertising agency where the yellow on the wall must match the yellow on my iPhone because this mobile device is now the benchmark of color accuracy thanks to all the social media influencers.

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Now we have all the primary and secondary requirements ironed out, or at least considered. You know the overall size, required pixel pitch, content, brightness, and color reproduction required. You can now ask the collateral questions like how much heat this will give off and how much power you need. Let me tell you from personal experience that these items need to be discussed, or some poor receptionist may end up working in a tank top in your flagship lobby because it is a brisk 80 degrees when the wall is only set to 30% brightness. Turn it to 100% brightness and you may have to start handing out welding masks for eye protection.

With everything we discussed above, the DVLED wall can be the most rewarding product installed on your project. It adds the punch we all try to achieve in the smallest, most repeatable puzzle piece. If I had to install an AV system and I needed to captivate as many eyes as possible, the DVLED would be my first pick. Feel free to contact us with questions or to learn more about DVLED walls.

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How Do You Achieve Meeting Equity on the Office Side?
Meeting equity solutions can be built into an individual camera, delivered by your AV system using multiple cameras, or delivered directly from features in your VC platform (Zoom, Teams, Webex, etc.). Aside from meeting equity, users need to walk into any space and immediately start collaborating. No more button presses on a touch panel to get the best camera shot.

Many cameras today have built-in algorithms, or artificial intelligence, to make them "smart." For example, they can watch for faces and bodies and automatically zoom in to show someone more closely. The solution becomes even more powerful when paired with microphones listening for someone actively speaking.

Cameras with Automatic Framing
The most straightforward cameras offer automatic framing, which is intended to show people in a space as closely as possible. This allows the camera to zoom in on a single person at the head of a table or to frame multiple people seated nicely around the table.

ePTZ Cameras
Simple framing is excellent for huddle rooms and small collaboration spaces that feature ePTZ cameras, often as part of a camera bar with built-in speakers and microphones. Examples are the Logitech Rally Bar Mini, Bose VB1, Jabra PanaCast 50, Neat Bar, Biamp Parle VBC 2500, Cisco Room Bar, Poly R30, and countless others. You might notice I grouped those together even though some are just USB peripherals and others have a built-in compute device. The commonality is that all have an ePTZ camera, a static camera without a motorized head. *Continued on Page 4.*

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ePTZ cameras start with a maximum number of pixels, often 4K, and "zoom in" by sending only a section of pixels to video calls. This is commonly known as digital zoom. ePTZ cameras typically have a very wide field of view (FOV), making them ideal for a huddle room where people may be seated very close to the camera. Most offer 120-degree, a few 150-degree, and PanaCast 50 is the extreme example with 180-degree FOV. My favorite ePTZ camera for image quality is still the Cisco Quad Camera, dating back to 2017.

PTZ Cameras
Automatic Framing is often also available in mechanical Pan-Tilt-Zoom (PTZ) cameras. Today's PTZ cameras are an evolution of the traditional VC room camera. I recommend PTZ cameras with a secondary wide-angle lens dedicated to framing purposes for single-camera rooms. Examples are the Logitech Rally Bar, AVer CAM550, and Crestron 1 Beyond Hawk.

Most PTZ cameras offer between a 60 and 85-degree field of view. Some might claim slightly higher but don't trust everything you read. Field of view is traditionally measured in the flat horizontal plane (x-axis from geometry class). However, some manufacturers have started measuring a diagonal field of view to claim a larger number. This also applies to ePTZ FOV specs. So when comparing cameras and planning the camera viewing area in a space, just be sure you're using horizontal FOV.

Camera Considerations
With ePTZ cameras at 120 degrees FOV and PTZ around 80 degrees, why not use ePTZ everywhere? This is where trade-offs come into play. PTZ cameras have much larger image sensors than ePTZ, resulting in better image quality. PTZ cameras also have mechanical zoom, so every pixel is always available. There's no digital cropping as in ePTZ cameras. But the downside is less field of view with PTZ. .

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As you move from huddle spaces to medium rooms and into large conference rooms, camera choice is partially dictated by where people will be located related to the camera. For example, if a table is very close to the front wall, is it ok not to see the nearest seats on camera? What if the table has a landscape orientation to the front wall? Will the camera see everyone in the room? Reviewing FOV against the use cases for the given space is critical.

Multi-Camera Systems
Multi-camera systems are now typical even in mid-level meeting spaces, though the idea is nothing new. Poly (HP) and Cisco started solving for Meeting Equity with the Polycom EagleEye Director and then the Cisco SpeakerTrack more than ten years ago. We've also built custom systems where microphone gating triggers switching and presets across multiple cameras for high-end spaces. The difference today is our ability to deliver multi-camera systems at a much lower cost because manufacturers have developed automation software paired with their hardware solutions. The prime example is Crestron's 1 Beyond Automate VX, where up to 12 cameras are used in a fully automated system. When someone starts speaking, a close-up shot of that person is sent to the VC call. Other trusted manufacturers, such as Extron and Q-SYS, offer similar solutions at a smaller scale with specific microphone partnerships.

What About Tracking Cameras?
Tracking cameras are available for training rooms and lecture halls. Tracking and framing are different. Tracking cameras actively follow a single presenter moving within a designated area. This could be a stage in a large space or simply near a whiteboard in a small room.

Today automated camera solutions are the default expectation when approaching a new design. Of course, automation may not be feasible for certain use cases, such as a virtual courtroom, and users often want the ability to turn off automation. Aside from these exceptions, great solutions exist for every space and user group. The experts at Verrex can help you design, build, or retrofit a camera solution that provides optimal meeting equity in your meeting spaces for how we work today. Need help giving all your employees an equal seat at the meeting? Contact us today.